THE DIRECTOR OF PLANS
HQ USAF

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These talking papers are somewhat long & detailed but the points may be helpful to Dr. Charyk.

SECRET

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON 25, D.C.

[illegible] Presentations to the National Security Council AUG 24 1960

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1. (CONF) During our discussion of the SAMOS Preliminary Operations Plan on 17 August 1960 you raised questions as to the applicability of the SAMOS operational concept under certain SAMOS program conditions. Also discussed briefly were two questions raised by the President with the Secretary of Defense which are scheduled for discussion on 25 August 1960 by the National Security Council.

2. (UNCL) Attached are amplified discussions of the above questions which may be useful in your preparations for the discussion of the SAMOS Program at the NSC meeting on 25 August 1960.

3. (UNCL) The classification of this Letter is CONFIDENTIAL because it relates to specific executive department communications.

Glen W Martin

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THE CLASSIFICATION OF THE CONTENTS OF THIS
Letter IS Confidential WHEN
STANDING ALONE OR DETACHED FROM THE REMAINDER
OF CORRESPONDENCE AND/OR ATTACHMENTS

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I. Applicability to the SAMOS Concept of Operation to the Transition from R&D Status to Operational Status

The SAMOS Development Plan is aimed at achieving an operational capability; and the SAMOS Operational Plan is aimed at using the developed capability. It is recognized that useful intelligence information will be acquired during the R&D phase. The remaining problem is to examine the transition phase into routine use of the system with the view of making the transition as efficient and economical as possible.

These are benefits to be derived from a calculated overlap of the development and operational phases. In order to be ready for operational use of a system once the system is ready, planned overlaps of facility construction, procurement and production, personnel assignment and training with the R&D are necessary. Any planning not cognizant of the controlled overlaps required would be wasteful of our most precious resource -- time.

The questions arise: How much overlap is required in each of the support areas above? In light of the uncertainties of R&D programs, when should operational preparation begin?

a. Were it possible to assume that a single end product would be fully developed by a given date, the end of the R&D program could be accepted as the end of the period of overlap between development and operations phases. Planning could begin using this target date.

b. However, in the SAMOS program, a single end product is not the development objective. Instead several different payloads are to be developed. During late stages of the R&D phase it is understood that after an appropriate number of successful R&D shots with a particular SAMOS payload, no more shots with that payload would be made for R&D purposes. Succeeding SAMOS R&D shots would be on unproved payloads until each, in turn, is considered to have fulfilled R&D objectives.

At this point the R&D program would end for the proved payload. Operational program overlap on that payload would end with cessation of R&D thereon. SAC should then be assigned responsibility for operation of the SAMOS system with the proved payload. As each payload, in turn, completes RDT&E, SAC would assume responsibility for its operation. Thus, SAC would initially begin operating with perhaps a single payload, and would continue and refine SAMOS operations as replacement or additional payloads complete RDT&E.

There are definite advantages to this procedure:

a. Initial operations by SAC of a single payload or limited number of payloads gives the opportunity to check effectiveness of SAC personnel, logistics, training and operations criteria before beginning operations with more sophisticated payloads. Early lessons learned can be fed back to ARDC for use in later RDT&E and also carried forward for later SAC operations of the expanding SAMOS system.

b. The early and continuing history of operational decisions which affect intelligence "take" may be analyzed and lessons learned applied to later larger scale operations as the SAMOS payloads increase in number and sophistication.

c. The guidance provided by USIB for the collection and production of intelligence may be refined as early experience indicates, better to assure the overall responsiveness of each payload and the entire SAMOS system.

d. The effectiveness of SAC arrangements to fulfill user requirements may be service-tested, and adjusted with minimum loss of time, effort and resources.

In summary, for the SAMOS payloads to become available singly or in small numbers would be fortunate. It would permit service-testing and modification of the system, where necessary, with minimum program impact. The above would be compatible with, and in furtherance of the SAMOS concept of operations.

If an orderly and progressive integration of the SAC operational phase with the ARDC development phase is to be carried out, it is necessary that funds be made available at an early date for such operations, especially in the event that R&D launchings of early SAMOS payloads should be more successful than expected. Should such successes occur without advance arrangement for prompt transition into operational exploitation, the Department of the Air Force and the Department of Defense may anticipate public censure for failure to plan for unforeseen successes as well as against unforeseen failures in R&D programs. Accordingly, it is recommended that operational funds be made available in time to permit efficient operational exploitation of early successes in the R&D program. A proposal will be forwarded at an early date providing detailed recommendations.

It has been proposed in some quarters that contractors should make follow-on launches of payloads after completion of RDT&E. R&D resources are urgently required for the development of unproved space systems required for the defense of the country. To use the critical creative skills and R&D resources for a job which can be done with operational skills and resources peculiar to the SAMOS system would appear to be undesirable.

II. Consideration Affecting the Collecting and Processing of SAMOS Data by SAC

INTRODUCTION

The only purpose of SAMOS is to get a final product-intelligence. All other functions of the system are means to this end.

Acquiring the data involves resources such as facilities, personnel, organization, control, and support which are used to carry out the functions of launch, orbit injection, tracking, acquisition, communications with the payload and recovery of raw data.

The case for SAC operation of the system, under the existing organization of the DOD, to include all of the foregoing functions has not been challenged seriously and is generally accepted.

The issue has arisen within and outside the DOD as to the extent of responsibility of SAC for developing, printing, reproducing and disseminating photographic film and ELINT tapes and the distribution by SAC of reports evaluating the data in varying degrees.

The question to be answered is: Are there good and sufficient reasons that the normal responsibility of SAC for producing, processing and disseminating intelligence should be curtailed or eliminated in the operation of SAMOS?

In answering this question the structure and established working relationships of the national intelligence structure should be considered. Reference is made to Attachment 3.

In accordance with responsibilities assigned by NSCIDs and the USIB for collection and production of intelligence to the DOD, JCS and unified and specified commands established by the Secretary of Defense, should the SAMOS system be assigned to SAC for operation:

a. The Department of the Air Force would support the collection and production of air intelligence by the SAMOS system, by furnishing personnel, materiel, and facilities of the SAMOS system to SAC.

b. SAC, as a specified command under the strategic direction of the Joint Chiefs of Staff, would be responsible to produce intelligence from SAMOS as directed by the JCS.

c. The JCS would be responsible that SAC intelligence collection and production "recognize the needs of other departments and agencies"* and "provide such additional intelligence within fields of responsibility as may be necessary to satisfy other requirements relating to the national security."**

To make SAC responsible for collection and production of intelligence derived from SAMOS would require that attendant authority to carry out these responsibilities be provided.

Further, to maximize operational effectiveness, the operating agency must be empowered to: analyze the system effectiveness from launch to data dissemination with the objective of prompt correction of deficiencies, adjust procedures, and make operational decisions which affect all system elements to include processing elements. This authority is essential to assure overall system responsiveness to approved requirements.

Elementary principles of management dictate that the SAMOS system, be operated as a system, under single authoritative command upon which is fixed responsibility for the responsive collection, production, processing and dissemination of intelligence information in accordance with established national procedures. SAMOS operations should be monitored by the JCS, Department of Defense and the U.S.I.B. to insure proper use of this important national asset.

RECOVERY SYSTEM

Of particular importance to the maintenance and progressive increase of operational effectiveness of any operational system is the post-flight inspection of flight vehicles. By use of this procedure the operating command can analyze malfunctions which occurred and potential technical problems, and can promptly institute corrective measures in assembly, maintenance or operations procedures as required.

In the SAMOS operations plan it is contemplated that SAC will perform all functions from payload launch through payload recovery.

Inasmuch as the recovered payload must be transported to some point for unpacking, developing, and processing into acceptable formats for dissemination, a single point should be selected for the performance of all the above functions to minimize handling packing, transhipment, etc., and the attendant loss of time in reaching users with intelligence data.

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* NSCID #2, para 10

** NSCID #3, para 6

Expeditious handling of data from the SAMOS recovery package ordinarily would seem to be required less than for read-out data since the former may be up to several days old when recovered, and further aged by shipment to a selected point for processing and dissemination. However, no reason appears to warrant protracting the processing by accomplishing it at more than one location.

The point selected would be immaterial from a time and motion standpoint. However, proper operation of any system, particularly one of the high cost of SAMOS, should permit the earliest feasible post-flight inspection of payload and capsule for analyzing operating effectiveness, mechanical or electrical problems which have arisen or might arise, and assembly error. This should be done by the operating command to assure the quickest feasible feed-back of information for use in future assembly, erection, launches, operation and support.

Since post-flight inspection, analysis, trouble-shooting and feed-back by an operator is fundamental to his effective management of operations, SAC should do this. Feed-back to ARDC for future tests, follow-on development and product improvement should be carried out as well.

Accordingly, capsule opening, data processing and dissemination and post-flight inspection should be carried out by SAC at a single point having adequate facilities to support these activities.

READOUT SYSTEM

Post-flight payload inspection is not a consideration in use of the SAMOS readout system. However, the relation of operational decisions on launch, orbit injections, tracking acquisition and any remote control functions to read-out results will likewise have an important bearing on the effectiveness of the read-out system. The results of the read-out system should dictate operational decisions, procedures and criteria affecting read-out effectiveness. Accordingly, a vital and continuing system of operations analysis of read-out results must be linked authoritatively with the operation of the SAMOS read-out system.

It would be unfortunate if one command should operate the satellites in orbit and another should operate the system read-out facility if decisions for one system element could adversely affect the effectiveness of the other. By its definition of the SAMOS system as a system, the DOD has recognized a need for technical and operational integration of its elements. The fixing of responsibility for deficiencies in output, for the institution of authoritative corrective action and for the hour-by-hour decisions which may affect system results should be centralized in a single command or agency after the completion of RDT&E on the SAMOS system.

The principle of minimized handling, packing, mailing and transhipment of reconstituted negatives, prints and data derived therefrom dictates that all required processing be accomplished at the point where the read-out and reconstitution facility is located.

That this facility be operated by SAC seems most appropriate in light of the foregoing. After reconstitution, the reproduction and dissemination process to fill standing and special orders for intelligence information could be carried out by SAC or by contractor personnel.

A major advantage of the SAMOS readout system lies in its ability to meet the USIB requirement of "flexibility which will permit coverage to be timed to meet the needs of specific intelligence situations as they develop".

This capability of the readout system is useful when time is of the essence, such as determining Soviet intentions in rapidly changing situations. Processing delays of SAMOS read-out information should be avoided. It appears, therefore, that data processing should occur at the same location to avoid non-productive handling, transhipment, etc.

SUMMARY

In the use of either system, read-out or recovery, whether processing be done by an Air Force contractor, or by Air Force military personnel assigned to SAC or other command, if SAC exercises operational control over processing activity for the reasons cited above, undesirable discontinuities in responsibility may be avoided.

III. President's Question to Secretary of Defense on:

The intelligence or surveillance requirements this program is being designed to fill, including the soundness of the concepts on which these requirements are based; their resulting validity as well as the procedures for, and supervisory control over, their preparation.

DISCUSSION

The requirements the SAMOS program is being designed to fill have been determined by the U.S. Intelligence Board in accordance with National Security Council Directives. These directives, issued by the NSC pursuant to the provisions of Sec 102, National Security Act of 1947, as amended, provided for the establishment of a national intelligence structure and working relationships therefor. NSCID #1 establishes the US Intelligence Board which is charged to establish policies, programs, intelligence objectives, requirements and priorities. It provides for Director of Central Intelligence Directives which promulgate National Intelligence objectives and priorities to the intelligence communities.

NSCID #1 defines departmental intelligence as "that intelligence which any department or agency requires to do its job". It provides that the several departments and agencies shall not duplicate intelligence production activities, but shall make full use of existing capabilities of other elements of the intelligence community.

NSCID #2 provides for the coordination of intelligence collection activities of the U.S. Government. It provides that "the Department of the Army, Navy and Air Force shall have primary responsibility for, and shall perform as a service of common concern, the collection abroad of Army, Naval and Air intelligence information respectively", and that "Departments and agencies carrying out the collection activities mentioned above shall recognise, in establishing collection programs, the needs of the other departments and agencies".

NSCID #3 provides for the coordination of intelligence production. It recognises that "Joint Intelligence is a special category of interdepartmental intelligence jointly produced by the Military Departments in the performance of the assigned missions of the Joint Chiefs". It directs each department "to provide such additional intelligence within its field of primary responsibilities as may be necessary to satisfy other requirements relating to the national security"; and reiterates that the Department of the Air Force produce air intelligence.

NSCID #3 further provides: "In the event that a requirement for intelligence is established for which there is not existing production capability, the Director of Central Intelligence, in consultation with the U.S. Intelligence Board, shall determine which of the departments and agencies of the intelligence community can best undertake the primary responsibility as a service of common concern".

NSCID #6 provides that the National Security Agency will have overall responsibility for the production of COMINT and ELINT in accordance with the principles set forth in other NSCIDs.

The U.S. Intelligence Board derives and consolidates general intelligence requirements of the various departments, services and agencies of the U.S. and establishes priorities among them for particular collection activities and intelligence systems of common interest.

In the case of SAMOS, USIB has established intelligence requirements for SAMOS and stated on 5 July 60: "The U.S. Intelligence Board considers it essential, therefore, that the United States develop and maintain an operational satellite reconnaissance system with a wide range of capabilities". It ties this need to fulfilling the National ELINT Requirements List and the National Priority Reconnaissance Requirements List (photo). The latter is broken into categories of priority interest: presently 35 highest national priority objectives, 500 of high priority and 3000 additional priority objectives. USIB further states that many of these objectives require coverage at intervals 1-6 months, the reconnaissance system should be flexible to permit coverage to be timed to meet the needs of developing specific intelligence situations, and that maximum use of the system would be in providing strategic intelligence information, the most urgent being in Soviet ICBM launch sites.

A joint regulation of the Army, Navy and Air Force (AFR 200-6) provides for the formats in which intelligence information will be disseminated, at various stages of evaluation, throughout the government.

In summary the requirements the SAMOS program is being designed to fulfill are of national scope and the highest priority intelligence requirements of the U.S. The intelligence concepts upon which based are those upon which the entire U.S. intelligence structure and effort are based. Their validity is as high as the membership of the U.S. Intelligence Board can assure for any intelligence requirement and the supervisory control over their preparation is as exercised by the President and the National Security Council.

The procedures for the preparation of these requirements can best be discussed by the Director of Central Intelligence.

IV. President's Question to Secretary of Defense on:

The effectiveness of control over the scope and characteristics of the operational systems, with particular attention to means for assuring early and efficient utilization of such systems.

DISCUSSION

The method of control over the scope and characteristics of the SAMOS system has been established by the National Security Act of 1947, as amended, and the DOD Reorganisation Act of 1958. The Secretary of Defense is responsible for the development of necessary weapon systems and support systems to carry out the missions of the Department of Defense.

He exercises control of the development of such systems with the advice and assistance of the Director of Defense Research and Engineering who controls all research and development activities of the DOD. The requirements which guide the DDR&E in developing the SAMOS system are derived by the U.S. Intelligence Board. Under authority of Section 102, National Security Act of 1947, as amended, the National Security Council is authorised to create boards and committees necessary to coordinate activities of government departments and agencies. The National Security Council Intelligence Directive #1 created the USIB and provides for its establishment of national intelligence objectives, requirements, and priorities. USIB provided definitive guidance to the Secretary of Defense on 5 July 60 for the development of the SAMOS system.

The Secretary of Defense exercises control, with the advice of the JCS, of operational systems by the assignment of weapon and support systems to the unified and specified commands established by him. In September 59 and again in June 60 the Secretary of Defense and the Joint Chiefs of Staff considered the necessity and desirability of creating a separate command under the Joint Chiefs of Staff for the coordination and control of military satellite and space vehicle operations. The Secretary of Defense decided on both occasions that the establishment of such a command was not necessary and that existing missions of the DOD could be carried out by the assignment of responsibility for the operation of space systems, where applicable, with appropriate operational authority, to existing unified and specified commands responsible for the military functional areas concerned.

In summary, existing statutes provide adequate basis for the exercise of requisite control over systems assigned to the Department of Defense. Regulations promulgated by the Sec Def and the organization for advising and assisting him in the contbol of system development and system operation are adequate and flexible. Intelligence requirements guidance received by him from the USIB is adequately definitive and permits flexibility of technical development to meet the intelligence objectives set forth.

Early and efficient utilization may be assured by:

a. Assigning responsibility for SAMOS operations to an existing unified or specified command. (Adequate logistic and follow-on development support has been provided for by the assignment of such responsibilities to the Department of the Air Force. The staff of the Secretary of Defense will assist him in the supervision of Air Force support of the system.)

b. Programming funds for operation of the system. As R&D on individual SAMOS payloads is completed, it is recommended that SAC, by operating the proved SAMOS payloads, immediately undertake the task of fulfilling intelligence objectives developed by USIB which have not been fulfilled during the R&D phase of the payload concerned. As successive payloads complete R&D they should be turned over to SAC for operation. This procedure will assure continuity between R&D and operations, will avoid the loss of vital time required to cover high priority intelligence objectives and will provide a means to assess the effectiveness of operational and support arrangements as the scope and tempo of operational activity increases.

February 3, 1961

MEMORANDUM FOR THE CHIEF OF STAFF

SUBJECT: Subsystem I Test Plan

1. The revisions to the Subsystem I test plan which I discussed with members of the staff on January 31, 1961 and which are incorporated in this memorandum are hereby directed. [redacted] costs are to be planned or provided.

2. The tests and demonstrations will be divided into two phases to better meet Air Force objectives. This will be done by rescheduling certain original March tests in April as Phase I and by introducing a Phase II during June for additional applications testing. The specific revisions to the ARDC Test Plan (Appendix II of the Equipment Applications Tests) are as follows:

a. Deleted Tests.

3.2.5 Display Projector Unit Operations
3.5.1 Production of Color Display Slides
3.5.2 Display Projection
3.4.6 Retrieval for Annotation of Photos
3.2.4 Still Picture Viewer Operations
3.3.1 Initial Titling at the Oscar
3.3.2 Retitling at the Oscar
3.3.3 Cataloguing of Information at the Still Picture Viewer
3.2.1 Photo Interpretation Console (PIC) Operations
3.3.4 Information Cataloguing at PIC
3.3.7 Non-routine cataloguing Known Targets
3.3.8 Cataloguing geographic areas.

b. Consolidation Phase I Tests.

A single test, 3.3.12, Symbiotic Extraction of Information will be developed from a consolidation of the following tests:

3.3.5 Cataloguing Information of Known Targets
3.4.2 Information Retrieval of Reporting Requirements
3.4.3 Maintenance of Data Fact File
3.4.4 Information Retrieval from Target Fact File
3.4.5 Information Retrieval for Report Printout

SAFS FILE
[illegible]

e. Additional tests in Phase II. The Phase II tests should demonstrate the polymorphic capabilities with the central exchange and associated peripheral equipment to simulate typical systems operations such as intelligence data processing, management analysis, determination of object height, cloud coverage measurement and summarization, utilization of the display analysis console, and the integrated operation of the consoles with the IBM 7090 Computer.

3. The final report under this contract must include a comprehensive evaluation of capabilities and deficiencies of all equipments developed under this program. The recommendations for equipment disposition should be furnished for my approval not later than July 21, 1961.

(Signed)
JOSEPH V. CHARYK
Under Secretary of the Air Force